Overcoming high hood vacuum problems with intelligent venting

High vacuum levels in the hood of the liner create multiple problems for dairy farmers and their cows, from slow milk let-down and reduced yields to uncomfortable milkings and teat end damage. The InVent system controls vacuum levels on each teat individually, resulting in calmer cows, reduced teat end damage, higher yields and faster milk let down.

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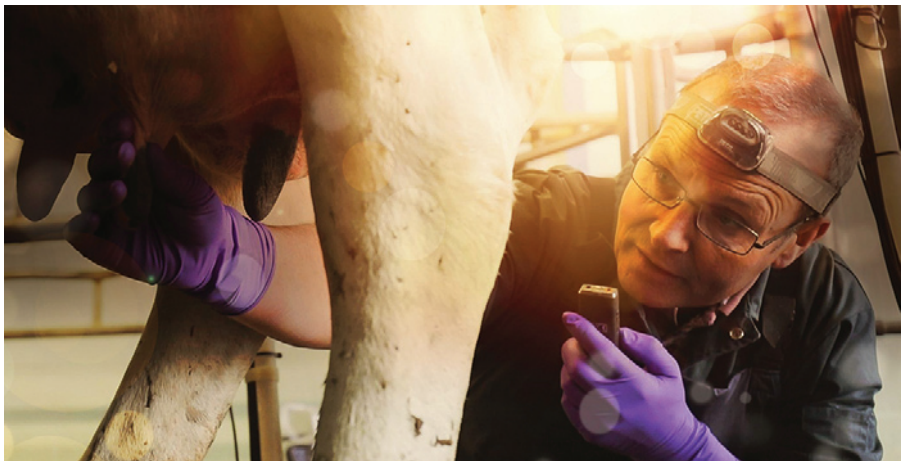

The problem: high vacuum levels

Every dairy farmer knows it is impossible to select a liner size that works for each cow and every individual teat. Whichever liner you choose, a liner is inherently a compromise, irrespective of the milking equipment being used. You can only choose a liner to suit the majority of the herd. Yet every teat is an individual.

Teats can be seen to vary widely in their dimensions and texture. They vary between cows and even between teats in a single udder. Furthermore, each teat's dimensions change dramatically during the various stages of milking.

In a conventional milking cup, it is this compromised choice of liner sizing that means some teats will suffer from a poorly fitting liner. This in turn leads to several negative effects:

- Excessively high vacuum causes swelling of the teat both externally and internally.
- The internal swelling – congestion – restricts the capacity of the teat canal slowing down milk flow and preventing full milk-out.
- Slower milk flow means the teats are under vacuum for longer than is desirable and makes them prone to increased trauma.

The solution: intelligent venting

With intelligent venting, the risk of congestion is significantly reduced because the ADF InVent milking cluster continuously controls vacuum levels on each teat individual.

The unique InVent system treats every teat individually – controlling and optimising vacuum levels to keep within the 'sweet spot' throughout milking. The unique InVent technology introduces clean, filtered air into the mouthpiece of the liner when vacuum rises to a threshold level. The results include:

- Maintaining the vacuum at the ideal 'sweet spot' that is comfortable for the cow and also maintains peak milk flow.
- A more comfortable milking experience for milkers and their cows, which helps to reduce stress levels when in the parlour.
- Milk flow increases and cows milk out more completely, enabling dairy farms to become more cost and time efficient, whilst protecting their cow's udder health.

Overcoming teat congestion

The filtered air can pull vacuum levels in the mouthpiece back into the safe zone enabling milk to flow as fast as possible. In a conventional milking cup, high levels of vacuum can cause the teat to swell internally, creating teat congestion that impedes milk flow.

With intelligent venting from ADF Milking, the risk of congestion is significantly reduced because the ADF InVent milking cluster continuously controls vacuum levels on each teat individually.

Independent expert's opinion

Dairy expert and internationally recognised milking technology specialist, Ian Ohnstad of the Dairy Group, conducted an independent assessment of the ADF InVent system.

His comprehensive testing programme compared ADF InVent against an unvented milking system to look for differences in post-milking teat condition – not just across the whole herd – but also within each cow's individual teats.

"Using ADF InVent showed a significant improvement in teat scoring assessed on multiple factors – ringing, congestion and colour," Ian told International Dairy Topics.

At the individual cow level – teat condition was significantly better on those teats milked with ADF InVent compared to

those teats milked with the venting disabled.

At the herd level – teat condition was significantly better when the herds were milked with ADF InVent in three measurements – teat ringing, teat congestion and teat colour. "Irrespective of milking system, irrespective of system vacuum, irrespective of liner design, all herds will have some cows that suffer from teat congestion. And as a consequence there will always be uncomfortable milking for some cows. Hence why intelligent venting will be so beneficial," Ian said.

The results include:

- Calmer cows with fewer kick-offs.
- Faster milk let down and shorter milking times.
- More complete milk-outs and higher yields.
- Improved milking parlour efficiency.
- Improved teat condition, udder health and overall cow health.
- Gentler milking action on teats providing cow comfort.
- Reduced stress for cows and operators.

With the InVent system dairy farmers can improve cow health, enjoy stress-free milking and improve milking parlour efficiency.

Controlling vacuum levels on each teat individually results in calmer cows, less teat damage, higher yields and faster milk let down. The results of InVent are outstanding.

"All our customers, without exception, have said cows were calmer and quieter. Some are getting an extra litre of milk per cow, with one producer seeing yields increase by two litres a cow.

"And not only are the cows milking out fully, but they are also milking faster and with significantly fewer cases of mastitis and lower somatic cell count. One producer has seen milking times reduced by 30 minutes – they milk three times a day so that is 1.5 hours a day, or 548 hours in a year – equivalent to 68 eight-hour shifts," James Duke, ADF Milking founder added.

Farm owner Mark Reed at Culverhayes Farm in Devon, installed the InVent system in April 2021. "I would say the InVent system is most beneficial for cow comfort.

We get a lot less fidgeting in the milking parlour from the cows.

"The general environment in the parlour is just a lot nicer for the cows now. We have also seen a reduction in ringing around the teats since using the system. Big improvement on that definitely," Mark said.

"It does not just improve cow health but it improves the working environment too. Installing the InVent system has allowed us to change some settings on our flows and take off times.

In the parlour milking 300 cows, it has saved us probably 20 minutes a day in milking. Cow longevity is important to us here, and I think the InVent system is only going to help that," Mark added.

Farm owner James Lywood from Battlehurst Farm in West Sussex also loves the InVent system.

"Since the installation of InVent milk yields have increased by an extra 0.5 litres per milking per cow. That's a litre a day and, potentially, around 300 extra litres per lactation for freshly calved cows," he says.

"In addition to the 20 minutes shaved off by the original Automatic Dipping and Flushing system, InVent has cut milking time by a further 10 minutes, pushing up daily time saved in the milking parlour from 40 minutes to an hour. If you look at that during the course of a year, that is a lot of hours saved," explains James.

"We also know our cows are being milked out more gently and completely, there are teat condition and udder health gains to be made here.

"Stress is also kept to a minimum, for the cows and also, ultimately, the person in the pit. Kicking, fidgeting, defecating, it is all reduced.

"Calmer cows then go back out into the sheds to drink, eat and lie down. There has to be other hidden health, fertility, productivity and efficiency benefits to be had here," James added.

InVent is an exciting breakthrough for dairy producers in the UK, increasing milk flow, reducing stress and improving teat condition and udder health all with one reliable milking cluster. The InVent system has brought dairy farmers and their cows the ultimate in cow comfort and unrivalled precision. ■